

A chair that's music to deaf ears

NUS team develops one that turns sounds into discernible vibrations

NATIONAL University of Singapore researchers have developed a chair that turns sound into vibrations, which could help deaf people experience music and even aid them in speech therapy.

Normally, sound waves travel through air to reach our ears, but they can also travel through solid materials.

The Haptic Chair - a garden-variety wooden chair with seat and back cushions, plus a footrest - is embedded with special speakers which amplify the vibrations from sounds and pass them through the wood of the chair.

The chair is the brainchild of NUS PhD student Suranga Nanayakkara, 27. He worked with researchers from the Marine Mammal Research Laboratory, the Electrical and Computer Engineering Department, and the Communications and New Media programme.

The team could not get access to enough deaf children in Singapore to test the chair on, so Mr Nanayakkara, who is

from Sri Lanka, went to a school for deaf children there.

The children sat in the chair for music and speech therapy sessions - with surprising results.

"There was a young girl who had rarely responded to her speech therapists, but when she sat in the chair, she could feel what her therapists were saying," Mr Nanayakkara said.

The team installed the same technology in a raised wooden floor for the children to dance and play on.

Partially deaf musicians here, such as teen piano prodigy Azariah Tan, 18, have also tested the chair.

Azariah, a student at the Yong Siew Toh Conservatory of Music, said in an e-mail: "I was intrigued by certain aspects of the chair, such as the different locations of vibrations according to the respective pitches and timbres."

Earlier this year, Mr Nanayakkara and his advisers showcased their work at the CHI Conference in Boston, the foremost meeting of scientists in the field of human-computer interaction.

They have filed a patent for the chair and are looking for partners to license the technology.

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The team behind the Haptic Chair - (clockwise from centre) Dr Elizabeth Taylor, Mr Nanayakkara, Associate Professor Lonce Wyse and Associate Professor Ong Sim Heng. ST PHOTO: DESMOND FOO